

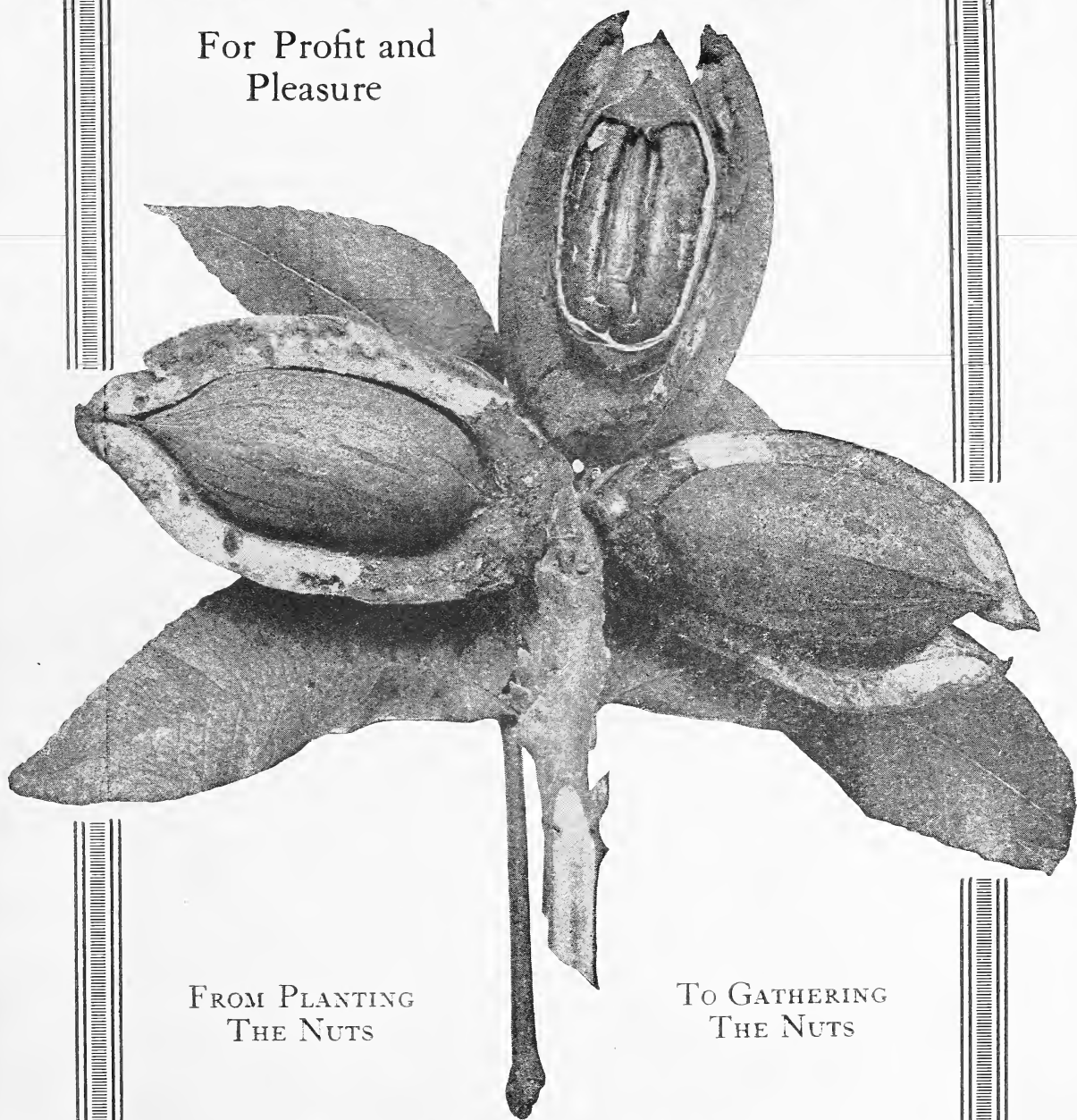
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62.13
Indexed
1923

The Pecan Business

For Profit and
Pleasure



FROM PLANTING
THE NUTS

TO GATHERING
THE NUTS

B. W. STONE

THOMASVILLE, GA.

62.19

PRICE LIST 1922-23

B. W. STONE

Thomasville, Ga.

Terms 1-4 Cash With Order, Balance When Trees Are Ordered Shipped.

| | Each | 10 | 100 |
|----------------|-------|---------|----------|
| 1 to 2 ft..... | \$ 70 | \$ 6 50 | \$ 50 00 |
| 2 to 3 ft..... | 90 | 8 00 | 70 00 |
| 3 to 4 ft..... | 1 00 | 9 00 | 80 00 |
| 4 to 5 ft..... | 1 15 | 10 00 | 90 00 |
| 5 to 6 ft..... | 1 30 | 11 00 | 100 00 |
| 6 to 8 ft..... | 1 70 | 14 00 | 130 00 |

VARIETIES—Schley, Stuart, Success, Moneymaker, Pabst, Brooks, Delmas.

No charges for packing or drayage.

Write For "The Pecan Business"—Free.

Fine R. I. Red Eggs, Post Paid, \$2.00 per 15.

Pecans on Half Shell

"In a Nutshell"

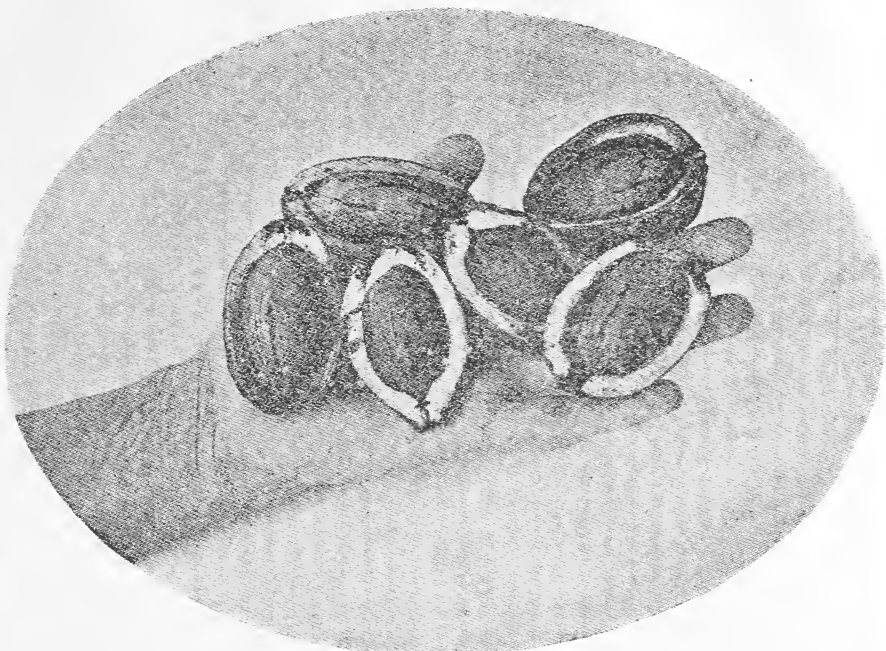
FTER over 20 years' experience in the Pecan business, we write this booklet just as it has been developed in the field, not detailing all of the plans and practices, but giving records of the latest and best improved plans in developing a pecan grove correctly and economically. We find the execution of a grove is more important than knowing how.

Twenty years ago we did not know we could develop a pecan grove with trees 12 inches in diameter at the end of eight years, but we know now it can be done, and know how to do it, and have done it. That is one object of this booklet. You will find herein statements of plain facts in plain practical language for practical people. The facts of the pecan business are good enough, there is no need of the booster's exaggerated statements.

We give both sides—the good and the bad, that the reader may be able to properly judge.

The present pecan crop of the United States if equally distributed would only be one third of a pound each, annually. We use sixty-five pounds of sugar and two hundred pounds of wheat each, annually. We have only entered into the paper shell pecan industry. Those who do not give intensive cultivation are only playing with the business. To date not over ten per cent are giving intensive cultivation

Tell your friends to send for a copy of "The Pecan Business. For profit and pleasure." We will mail a copy of this booklet free to anyone interested in pecans.



Pecans on Half Shell

“In a Nutshell”



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Guarantee

We guarantee trees to be healthy and true to name to customers who buy direct from us; to be grown, dug, packed and delivered to common carriers in first class order. Not liable for damages to exceed the original cost.

We make no charge for packing or drayage or boxes.

Articles of merit honestly handled and guaranteed don't beg a market.

C. O. D.—Parties who prefer to pay on delivery of goods can avail themselves of that privilege by sending 25 per cent when trees are ordered shipped, the balance collect on delivery, the charges for collecting and returning money to be paid by the purchaser.

Remittances—By P. O. Money Order, Express Money Order, or New York Exchange.

Shipping Season—From November 15th to March 15th.

Club Orders—Many responsible persons get up club orders in their own community and send in to secure club rates. Such trade is especially solicited. Club rates will be given on application.

Substitution—We make no substitutions. We let other nurseries do that.

We write, as well as we know, a true and honest account of each variety of fruit, and each planter is able to make his own selection. We burn what is not called for.

Our Catalogue gives accounts of varieties of fruit honestly, truly and without exaggerated statements and misrepresentations—just facts in every day clothes. We believe that a legitimate and good business can be conducted by giving facts only. We know a much larger business could be easily carried on by giving all of the good points and none of the bad.

Take labels off of trees and make record of orchard. Then you will be able to order exactly the varieties adapted to your place. Labels often cut the tree in two and cause it to die.

Send 10c for sample of nuts.



The grove which produced \$90 per acre the ninth year.

The Pecan

THE PECAN is an American species of nut bearing trees, and is called *Hicoria* pecan. It is found in certain parts of the United States and Mexico. Today it is the most important of all the nut bearing trees grown in the United States. Until 1890 practically all the pecans that were offered in the markets were of the wild varieties. Indians gathered nuts from large pecan trees before our Southern States were settled. The length of time thought necessary to grow a pecan tree to bearing age was considered too long for the hard pressed citizen to undertake, thinking that at least over one generation was necessary to grow the tree. This feature of the industry, by improved methods, has been reduced till practical men are now undertaking to develop pecan groves in the most favorable sections of the United States, and expect to gather nuts from them a few years later.

All of the present large improved paper shell pecans are the result of selection of seedlings; and the promising varieties today, of over 100, would not exceed twelve. Each section has its special varieties of about five in number.

There has been some effort to hybridize the pecans, and the possibility of this work is beyond the hopes of the most sanguine workers. We first had the seedling apples, and the seedling pears, and the seedling plums, and the seedling peach. We do not use seedlings of any of those fruits now. The future will possibly show equally as great improvement in the development of pecans.

This line of study invites careful, thorough and, I might say, young scientific students of horticulture.

The requirements of a successful pecan grove are:

Good location and soil.

Good varieties.

Plenty distance.

Proper cultivation, fertilization and spraying.

The sections of the United States which can afford the above requirements to the best advantage are the sections which will grow pecans most profitably.

Best Location

The portion of the United States from Maryland to Missouri for the northern border, and from Missouri to Texas for the western border, the Gulf of Mexico for the southern border, and from Maryland to Florida for the eastern border, includes the section where pecan trees grow.

There are splendid seedling pecans adapted to Tennessee and all territories further north, but the present improved paper shell varieties we offer are best grown south of Chattanooga, Tenn., and as far north as those portions of North Carolina which are of the same temperature.

From Bulletin 251 of the United States Department of Agriculture, the most intense sections for the growing of improved pecans are southwest Georgia, southern Alabama and northern Florida. The reason for this is that these sections fulfill more of the requirements of the

pecan than any other sections of the United States.

Between the thirty-first and thirty-third latitude from the Carolinas to the Mississippi is best location.

When we take men like Prof. John Craig, who held the position of Professor of Horticulture of Cornell University, which is the highest chair of horticulture in the United States, and when we take into consideration that he, more than once, visited the Orient to study horticulture and the possibilities there, and when we further consider that he was in position to carefully consider the possibilities of the apple of all the favorable sections in the United States, and the possibilities of the peach in the many favorable peach sections in the United States, and the possibilities of the California and Florida oranges; and, as we say, when we take into consideration this man's opportunity for knowledge and the fact that he, after visiting all pecan sections, decided to plant several hundred acres in the territory mentioned, it is one of the strongest

proofs which we have that this section is eminently adapted to pecan growing.

Really the cotton belt is, practically speaking, the pecan belt, and from a horticultural standpoint lies between the orange belt and peach belt. In sections where oak and hickory grow readily are places good to plant pecans. In the absence of hickory, plant after large trees of any kind, if not on land too poorly drained.

The Mississippi delta and the river bottoms of south Texas, so far as richness is concerned, are very desirable sections for the planting of pecans. Pecan trees are not often damaged by overflows after they are two years old, but are usually benefitted.

Best Soils for Pecans

In discussing this very important subject, we have made quite an extensive study of it, and give our readers the benefit of some observations.

In the first place we will make the assertion that the pecan tree has a great power to adapt itself to different soil conditions.

On the Brazos river in Texas, we saw fine pecan trees growing on soil that was fifteen feet deep at least, and in the Pan Handle section of Texas they do not have such deep rich alluvial soils, but instead they have a black waxy, compact soil, but still very luxuriant pecan trees grow there.

In the Mississippi Delta and Louisiana we found the alluvial deep, rich soil with plenty of water supply producing magnificent trees. In south Mississippi in some sections of very low, naturally soggy soil, which had been well drained with frequent open ditches with a sub-soil of a grayish nature, where the crawfish dwells, but is ashamed of his habitation, judging by the way it hides when you approach it—still under those conditions of soil, we find some magnificent results of pecan growing.

Along the Piedmont foothills we find a very hard compact red clay soil producing excellent trees.

At Americus, Georgia, which claims to be the driest section of the state, and boasts that they have a water table about ninety-five feet below the surface, still they are growing on such soil, pecan trees that are second to none. Within less than one hundred miles below Americus, we have seen fine pecan trees stand in water in the summer time for over six weeks and not be killed.

In southern Florida near Tampa, is

found a magnificent pecan tree which was annually yielding splendid crops of nuts, and upon investigation, found that there was no clay in reach of the deep tap roots of that pecan tree.

From the above, you can readily see that no particular soil can boast that it is the only one suited to the development of a pecan tree any more than can any particular soil boast that it is the only soil for best results of growing cotton. Gather with me the fact that there is something besides special soils which a pecan tree needs. You will also observe that the thrifty trees above mentioned got plenty of plant food at the right season of the year, a sufficient amount of water (at the same time, never stagnant water nor a sour soil), but had moving moisture supply and air drainage for the roots.

Thus the best soil is where we get an adequate and uniform supply of plant food; a uniform supply of moisture with good drainage; uniform cultivation at right seasons of the year. The above requirements are most generally found on a loamy soil with chocolate red, yellow, or gravelly clay sub-soil; preference given in order named.

Thus you see pecan trees require three things: Moisture, drainage, plant food in a proper climate, and only soils which supply these three requirements are best for pecans.

Soils naturally endowed with qualities for best development of regular farm crops, like cotton, corn, oats and potatoes are the soils that will produce best pecan groves. Sour, damp soils will never produce a satisfactory pecan tree.

A soil that naturally grows large trees is always a strong one. Such soils have uniform subsoils, and are void of irregularities of pipe clay, muck pockets, etc.

Remember that a pecan tree is a perennial, deep rooted tree, and should be grown on soils in which the roots of this tree can be provided for favorably.

Preparation

A thoroughly prepared cotton or corn-field is a most excellent place for the planting of pecan trees. Subsoiling the land for a few years previous is quite beneficial, deepens the soil and helps the supply of moisture. The only way in which an improvement could be made would be to grow one or two crops of leguminous plants and turn them under for the benefit of the soil. Should there be any wet or seepy sections in the grove, these should have open ditches or tile

drains, sometimes both, for best results. The tile drains could be run between the pecan tree rows.

If the soil is new ground, it is best to remove the stumps and plant some crop like peas or corn and peas for one year before planting the trees. We have dug holes for trees in new ground and hauled good field soil to fill in when planting the trees with good results. Remove all sticks and chips from near the tree to prevent wood lice from damaging the young trees.

Distance to Plant

On all good pecan soils the trees should be planted at least 70 feet apart. On Mississippi delta land and other very rich land the trees should be planted at least 80 feet apart. On some close fine grain soils that make short limbs and intensive growth, about 60 feet possibly would be the best distance.

The best plan is to plant the rows eighty feet apart and the trees forty feet in the rows. Plant one variety in the even numbers and a different variety in the odd numbers. In about fifteen years, leave the best variety, this would give you trees eighty by eighty feet.

About four trees are enough on good land after trees are 25 years old.

| | |
|---|--------|
| 17 trees to acre places them 40 ft. | apart |
| 20 trees to acre places them 46 ft. 8 in. | apart |
| 17 trees to acre places them 50 ft. | apart. |
| 12 trees to acre places them 60 ft. | apart |
| 10 trees to acre places them 66 ft. | apart |
| 9 trees to acre places them 70 ft. | apart |

Digging the Holes

We like holes dug 30 inches deep and 30 inches wide, throwing the top soil on one side and subsoil on the other side. If planted early in the season a large hole is better. In planting in the spring at the end of the season a small hole for the tree is surer. In planting a tree in the smaller hole the roots can touch the walls more quickly and get the benefit of the rising moisture by capillary action. A very large hole in the spring time, during a dry spell, is much harder to keep moisture in than a small hole.



Pecan Nursery

Dynamiting for Trees. We plant trees both with and without dynamite. The advantages of using the dynamite are: To loosen up very hard soils and those with hardpans, and to facilitate the work where a large quantity of trees are to be planted. Grove trees, where they have become very closely packed, or where the soil has been too wet at times, are often benefited by the use of two or four charges of dynamite to within eight feet of the tree.

The only disadvantage in using dynamite is when the soil is too damp. It then has a tendency to form a large pot; also it makes loose soil too loose.

Planting the Tree

Trees should be conveyed to the field for planting without allowing the roots to become dry at all from exposure to wind or sun. We prefer planting by taking boxes of trees as received from the nurseryman, removing the top, putting the boxes on a wagon, and take out one tree at a time fresh from the moss and plant it with the original moisture on it. The trees can also be unpacked and put in a barrel of water and carried to the



Planting the Nuts

field. When ready to plant take a knife, shears or saw and cut off afresh the tap root. This removes any broken parts or the possible chances of wood lice getting a start. Cut off the broken roots by making the slope on the under side:

In the well prepared holes stand a tree in the hole to see that if when planted it will be the same depth that it was when it grew in the nursery. This is done by digging the hole a little deeper or filling it up some, or trimming the tree. Use only good top soil in filling the hole around the tree. Put in little shovelfuls and straighten out each side root as you come to it, packing the soil as nicely as you can without bruising the roots. A rammer made out of a hoe handle with cloth tied on end is an excellent tool. When two-thirds planted, two buckets of water applied around the tree will prove of good advantage. It is best to allow a half-hour's time for the water to soak around the roots, and then finish filling up the hole with dirt and pack it. Always leave loose soil on top. Be sure not to let the collar of the tree be exposed for any part of an inch. If left exposed the tree will not grow. While the dirt is being filled in around the tree, it is well to sift in about two pounds of fertilizer from the bottom to the top, so that when the rain comes it will dissolve the fertilizer and permeate the whole soil.

One January we planted 200 trees by loosely throwing in the dirt and not packing at all. Fortunately a heavy rain occurred in a few days and settled the dirt more carefully and accurately around the

roots than we could have done by foot or hand. It was necessary to send a hand over the field and refill most of the holes and only two trees had to be replanted.

In a dry time, to plant a pecan tree and not pack the soil, would be risky, for the tree would be giving up its moisture to the soil and would be damaged. We have planted pecan trees and used a whole barrel of water to the tree, making a regular puddle. It is not a bad plan to plant a pecan tree as carefully and as thoroughly as you do a tomato plant.

The later in the season a pecan tree is planted, the more care is necessary to pack the dirt around the roots. If you will fill in around a pecan tree till you have just gotten above a cluster of roots, and leave the hole in basin shape to receive two buckets of water, this water will place the dirt more carefully and closely around the roots than it is possible to do in any other way.

The best way to plant pecan trees in Texas, where they experience such severe drouths, is to dig the hole just sufficiently large to well accommodate the roots of the tree. Use water in planting so the soil will be in close contact with the roots and solidify the freshly thrown in soil with the bottom of the hole so as to re-establish capillary action. Then carefully and thoroughly, mulch the tree. If this is done, good results will be obtained.

December is the best month in which to plant the tree. January and February are the next best, and March is often as good, provided a severe dry spell does not follow.

Hillside Groves

On all reasonably level land, it is more satisfactory to lay off rows straight, but on hillside, where terraces are needed, do not try to have the rows straight. Lay off rows about 30 feet from the terrace and with the terrace. Trees grown this way will be more easily cultivated and will yield more nuts.

Mulching and Staking

When a pecan tree has just been planted, the best thing that can be done for it is to give it a good mulch consisting of coarse litter. An armful of cane pomace or pine straw makes a good mulch. Four pounds of oat straw or other coarse material also makes a good mulch. A little retention of moisture in a severe drouth often means the life of a tree saved. Visit one tree during a dry spell with a mulch around it. Investigate the moist condition of the soil unpacked just beneath the mulch and be converted to mulching.

Two good stakes about 6 feet long, about 2 feet in the ground and about 16 inches from the tree on either side is the next best investment that you can make for a pecan tree. If the lower end of the stake has been dipped in coal tar it will last longer and ward off wood lice.

In planting trees around the house, a four-inch sewer pipe placed 16 inches deep and 12 inches from the tree, so that a couple of buckets of water can be poured in them once a week in a dry time, often means the life of the tree and the gaining of one year's growth. Stuff a sack in the mouth of the pipe. In the absence of a sewer pipe use an old stove-pipe or wooden box.

Fertilizers

In the study of fertilizing pecan trees we desire simply to comply with the demands of the tree, both in reference to the ingredients and the moisture supply. The demands of the tree are nitrogen, phosphoric acid, and potash principally. Some lime, vegetable matter, and moisture are also required.

In planting a tree use one pound of bone meal and one pound of sheep manure sifted in from bottom to top. This is sufficient fertilizer for the first year. About February of the second year, apply 4 pounds of a guano analyzing 8 per cent acid, 4 per cent ammonia and 4 per cent potash. This is best applied in a barred furrow 6 or 8 inches deep on

either side of the tree for a space of 3 to 4 feet. Immediately cover with turn plow. The third year use 6 pounds, the fourth year use 8 pounds, and apply as previously described, except lengthen the space of application. The fifth year use 10 pounds. This should be applied under the branches of the tree and immediately plowed in.

In applying fertilizers to a tree five years old or older, walk around the tree just under the edge of the outer limbs, strewing the fertilizer to the right and left, letting the larger per cent be applied to the outer side, as more roots of the tree are there than on the inner side.

The future fertilizer for the grove should be applied broadcast, either under regular crops, or peas, for the benefit of the trees.

As the trees begin to bear, use less nitrogen and more potash.

As to the forms of fertilizers, would say that cotton seed meal, stable manure, tankage and leguminous crops are the best forms of nitrogen. Bone meal and acid phosphate are the best forms of phosphoric acid. Sulphate of potash, muriate of potash and Kainit are the best forms of potash. We do not recommend nitrate of soda or sulphate of ammonia at any time.

In applying lime from 1000 to 2000 pounds to the acre should be used. We consider the fall of the year the best time to apply it, and the application should be broadcast and harrowed in.

In France heavy applications of lime are made in the walnut groves. Also in the United States walnuts respond to lime. In no case do we know that lime has been detrimental to pecans unless it makes the shell slightly thicker. Chestnuts are damaged by applications of lime.

Pecans are making some growth and the roots are active most all of the growing season, so there should be plenty of plant food available for the trees all the time, but the principal growth is made in the spring.

In fertilizing a bearing grove, apply broadcast February 1st from five hundred to eight hundred pounds guano of analysis 8-0-4. This is for healthy tree growth. Just after blooming, if a crop of nuts set, apply that much more to take care of the crop of nuts independent of the tree growth so as not to sap the tree. Should an extra heavy crop set, then July 1st either thin nuts by pruning, or apply another application of fertilizer.

We are conducting fertilizer experiments on pecans, using different forms.

proportions and amounts, and will be able to give additional information on this subject in the future. That is one of the interesting features of the pecan industry,

The Best Cultivation for a Pecan Grove

The best cultivation for pecan trees is a subject that is very interesting to all pecan growers. In the cultivation of a pecan tree let us consider what the tree demands. The tree demands the soil be broken about 4 or 5 inches in the winter time, when the tree is dormant, any time after the leaves shed and before the buds swell in the spring. In order that a full supply of moisture may be stored in the soil, this breaking should be done early enough to allow the winter's rains to soak into the soil instead of running off. The other cultivation during the growing period of the tree is simply to prevent weeds and grass from growing, and to conserve the moisture in the soil. This cultivation through the growing period should be more shallow than the breaking, and should cease about the first of August.

The tree demands that these cultivations should be regular each year. The land should be broken about the same depth each year, thus preventing interference with the root system of the tree. The cultivation should be regular and shallow so as not to cause the tree to shed its young fruit. It also demands that a splendid field for root growth be maintained during the growing season. The most satisfactorily cultivated trees are those where regular crops are grown. It is disastrous to break the land shallow one winter and deep the next. It is also disastrous to plow the land too deep during the growing season, or failing to keep the land plowed.

Large cotton stalks or other deep rooted plants in a bearing pecan grove can easily be managed by first running a stalk cutter, and then running a two-horse plow diagonally across the rows.

I consider the best implement for the annual winter breaking of a pecan grove to be a regular turn-plow. The reason of this is that a turn-plow will plow a more uniform depth than a disc, and will give much better satisfaction in plowing through the bermuda sod and grass patches. It will also cut off briars, heavy weeds and bushes more satisfactory than a disc. A disc plow has many advantages, but if run too shallow, will not thoroughly break the soil like a turn-plow, is harder

to regulate the depth, and does not handle bermuda sod and heavy grass patches satisfactorily. If set for heavy sod, when it strikes clean soil, it will go too deep. A gang of turn-plows pulled by a traction engine and each plow with a strong roller disc colter or jointer attached to it for cutting sod and rolling over underground obstructions, will give satisfactory results.

Orchard Management

Under the subject of Orchard Management we propose to treat it only from the field point as to what crops to cultivate in the orchard. In other words, how to manage so as to develop a pecan tree or a pecan grove. We have already told how to plant, mulch, stake and water pecan trees, and this applies to trees around the house as well as to larger groves.

For a small grove the best management is to use the grove as an intensive truck patch. A highly fertilized, low-growing crop is an ideal condition for pecan development, for this complies with the requirements of the tree—early breaking of the land, thorough cultivation, plenty of plant food, and desirable moisture supply conditions. Those who have developed larger groves have come the nearest to complying with these requirements, thus fulfilling demands of the tree.

On a larger scale, cotton or any low-growing crop like Irish potatoes, pinders and peas are the best crops to be grown. Sweet potatoes keep soil moist too late and sometimes cause winter-killing. Cotton should never be grown more than two years in succession in a pecan grove, for the reason that it robs the soil of too much humus. After growing two crops of cotton, by all means use a crop which will permit of peas or velvet beans being planted.

A corn crop in a young pecan grove is detrimental, from the fact that the shade and lack of air circulation retards the growth of the trees. If corn is to be planted, leave a space for three rows of pinders to be planted at the tree row. In a cornfield if the rows run east and west more sunshine will be allowed to the tree than if the rows run north and south.

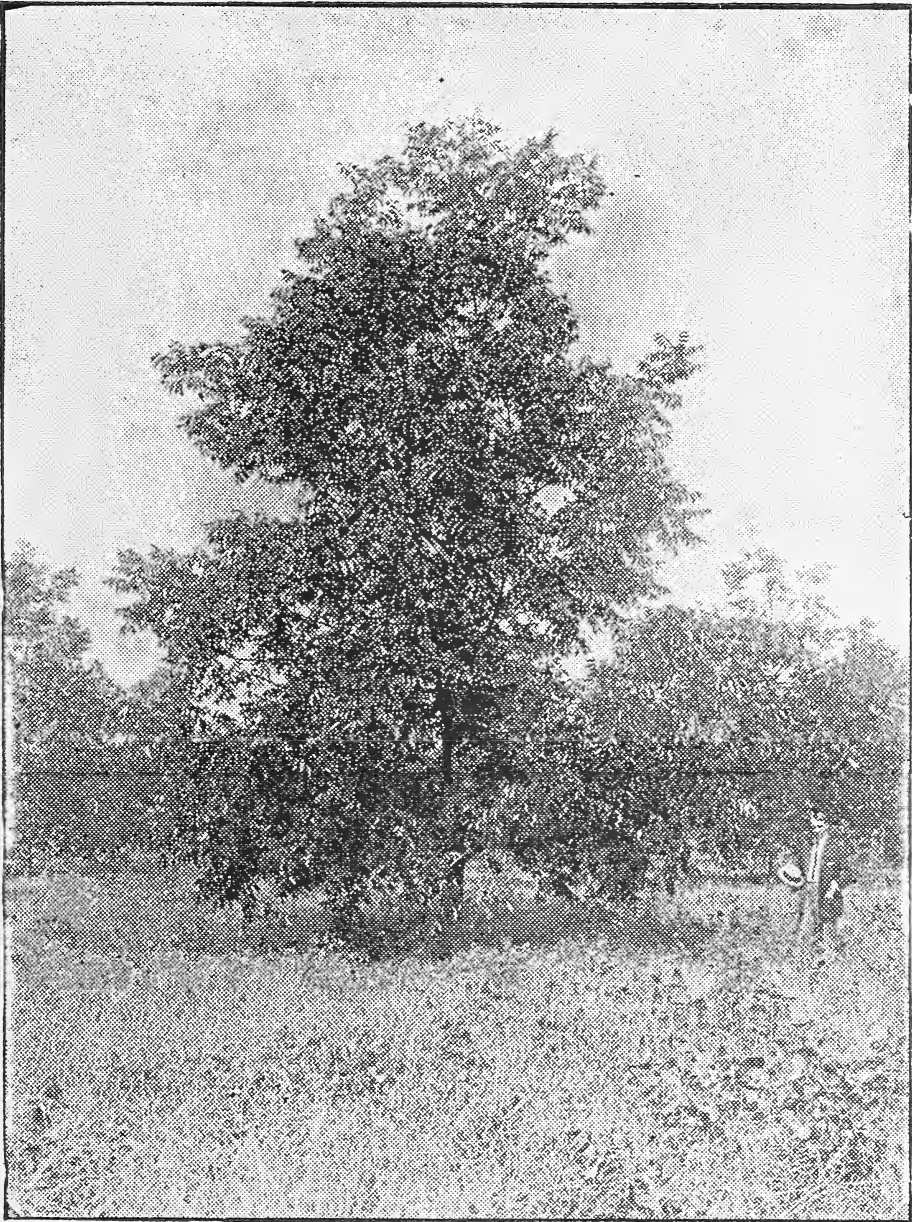
The management of a large pecan grove is best accomplished by leaving a strip along the tree rows and grow no crop at all, just cultivating it to keep it perfectly clean and to conserve moisture till near the first of August, and then plant to peas.

After the land is broken in the winter a double-action harrow is one of the finest

tools made to use on this strip. If the strip is in fine cultural condition, an Acme harrow can be advantageously used. For such work in the near future we expect there will be a large disc harrow arranged with a force feed fertilizer attachment, which will be used in putting out the fertilizer around the trees. This tool will cultivate the land, open the furrow for fertilizer and cover it up, all by one man and one team.

Under this subject of "Orchard Management" a system can be established

for large groves by just growing two crops in the groves—oats in the winter and peas in the summer. This can only be done by those who will use a heavy application of fertilizer, both under the oats and under the peas, taking care not to plant oats near trees. These two crops, properly managed, will be remunerative, and have the advantage of requiring a small amount of labor, and can be handled mostly by machinery. These two crops, on average soil, should not receive less than 1000 pounds of guano



Budded Pecan Trees—eight year set, 12 inches in diameter

to the acre in the course of a year's time for most economical results.

In the planting of oats in a pecan grove it is quite an advantage to cut the oats for hay instead of allowing them to mature. By making oat hay there is less moisture and less plant food required than for oats. Then again, it allows the land to be plowed earlier for peas, often an important point in conservation of moisture. Fulghum oats are best.

Considerable less fertilizer can be used if nothing but the oats crops are gathered, leaving the whole pea crop each year to be turned under for the next year crop, and for the improvement of the land.

After the trees begin to bear, if the land is planted in ninety-day velvet beans in conjunction with half a corn crop, after the land is carefully broken in winter and harrowed in spring, you will get magnificent results from this plan. The preparation of the land suits the trees and conserves the moisture. The small growing of beans and corn plants during dry May do not rob the grove of the moisture. Later the shade of the beans keeps down obnoxious plant growth, and keeps the soil cool; at the same time, it stores up nitrogen in the soil. This crop can be easily harrowed down around the trees to permit nut gathering, and the remainder of the crop can be used for cattle pasture.

A plan hard to beat is to grow an intensive crop of runner peanuts using one thousand pounds of 8-0-4 to the acre. Let hogs gather the peanuts and do not use a mowing machine at all. Keep this up for as long as you want a fine crop of nuts.

A finer grove can be developed from freshly set trees than from a grove three to four years set, if abused by the negro and the mule or otherwise stunted.

A stunted, scarred, pecan tree is an abomination, but do not get discouraged. Prune close, fertilize heavily, and cultivate well and a new thrifty tree will take its place. A pecan tree is the only fruit tree which can be stunted for twenty years and then be made to develop into a fine thrifty tree.

Pecans and Alfalfa

I wanted to know if alfalfa and pecans would make a good combination, so planted 13 acres of a five-year grove solid to alfalfa Oct. 10, 1914. The alfalfa did nicely and the best acre yielded 5400 pounds and sold for \$54.00 baled.

The way to grow the two together, pecans and alfalfa, is to first get the pe-

cans established one or two years, and then plant to alfalfa. On a strip by the side of the tree row, use the mowing machine frequently to prevent heavy growth. On the middle strip between the tree row, cut for hay or graze by pasturing. As the alfalfa gets older, widen the strips which are mowed. When a dry season occurs, mow the alfalfa very closely, always leaving the mowed alfalfa for a mulch. The advantage of this arrangement is you are through with plowing, the alfalfa builds the soil for pecan trees, the clippings mulch the land, the grove is always accessible for the spray wagon, and there is never any danger of fire.

The plan is all right but our soil failed to be adapted to alfalfa. In alfalfa sections the above plan will result well.

Growing a Pecan Tree

On flat beds, prepared as if for cotton, 5 feet wide and previously fertilized with about 500 pounds of guano in the drill, we make a trench and plant blocky seedling nuts, running about 100 to the pound, 5 to 6 inches apart. This planting is done in December or January. We cover the nuts 2 inches deep and await their sprouting. Just before they come up we board them off, which helps to keep down the weeds and grass. With rake and small hoes we clear the drill and with cultivators we plow the middles.

About the middle of August we plant a row of peas between the rows of trees in order to keep vegetable matter incorporated in the soil. We grow the peas also between the trees that are large enough to dig, for we find that the peas do the most good after the trees have quit growing, and the peas help to ripen up the trees.

Eighteen months after the nuts are planted the seedlings should be from 2 to 3 feet high and are ready to bud. We consider the month of July the best month for budding nursery trees. We generally commence the last of June and continue through August. This is the time of year that the sap is flowing freely and will allow the bark to slip.

Budding the Pecan. We use a double-bladed knife by taking two single rigid knives which we get of Mayer & Grosh, Toledo, Ohio. We rivet them to a piece of poplar, so as to make the blades parallel and one inch apart. We can furnish these double-bladed knives for \$2.00 each, postpaid.

Use well developed buds for the trees from which you wish to bud; preferably cutting the buds in the morning for the

whole day's work, immediately cutting off the leaf stems and wrapping the bud sticks in a damp cloth.

Budding the Tree. On a smooth place on the tree with a knife remove a cuff by cutting just through the bark, split on back and remove cuff. Then cut a cuff with bud on it off of the bud stick, remove carefully without splitting and insert on tree where space is made for it. Take a strip of waxed cloth one-half inch wide and about 14 inches long and wrap the bud securely, like a surgeon. Commence below the bud and get one round so it will be lapped and secure before you get up to the loose bud. Carefully hold the bud in place and wrap spirally, leaving nothing out but the bud, and you need not leave it out. In three to four weeks the strings should be taken off. Cut top off 4 inches above bud and keep off suckers. You may tie bud to this stub to prevent wind from blowing it off.

Budding Cloth. Take $5\frac{1}{2}$ pounds rosin, 8 pounds beeswax, 1 pound tallow, best quality of each, put in a lard can and heat till it boils. Good bleaching makes best cloth. Tear in strips 14 inches wide and fold close to dip. Dip in and with two thin boards strip off all the wax you can. Unfold while warm. When cool, fold up and keep wrapped in good paper. These are the exact operations practiced by us.

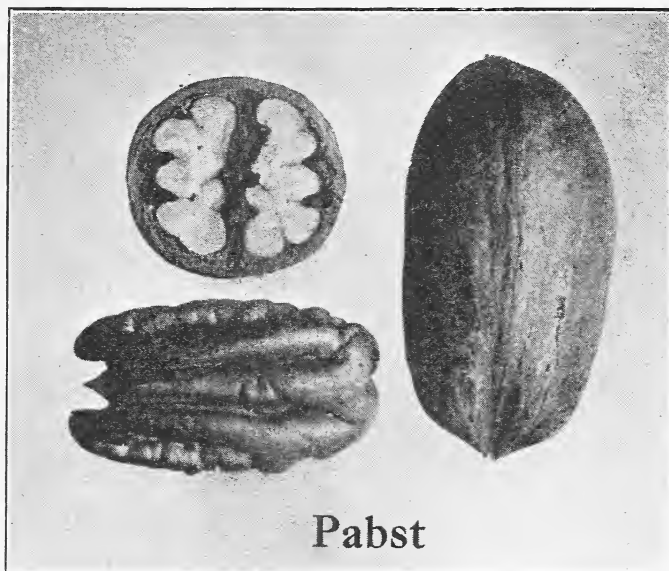
Several parties have learned how to bud from our instructions, but a number of them write us that growing trees is a business of itself, and that they prefer to buy them than grow them.

Cost of Groves

The cost of a grove depends upon the location. It can be developed much cheaper on a small scale, where the owner looks after it personally, than where it is managed at a distance.

The first thing to consider is the cost of the land; then comes the preparation, the digging of the holes, planting of the trees, cultivation, fertilizers, re-planting, management, the interest on investment, taxes and overhead charges.

Where one is conveniently located



See description on page 23

and can grow intensive crops between the trees, the cost of the grove is reduced to the minimum price. But where the grove is developed on a larger scale intensive cultivation is out of the question; the returns for the crop do not enter into the returns from the investment, and the grove is a constant expense till it begins to bear. So the cost of the grove depends upon convenience or inconvenience, and its size, together with the time it takes to develop it.

There are bulletins written showing the cost of apple orchards and peach orchards to the bearing age, and the prices range from \$200 to \$500 per acre. A pecan grove can be produced for \$50 to \$500 per acre.

Pruning

Pecan trees require as little pruning as any fruit trees grown. When the tree is first set out, unless it is over 7 feet high, we do not even take off the terminal bud. Were we planting in arid Texas, we would cut them down to 12 or 18 inches high.

When the buds first grow, possibly the best plan is to promptly remove all those not needed, leaving only those at the top to form a head.

It is best to leave every leaf on, and when the buds have grown 2 or 3 inches pinch out the buds of the undesirable branches and leave the leaves on the stem to aid in the assimilation and developing of sap; shading the body of the

tree and not leaving the scarred surface by removal.

The first two or three years the only pruning necessary is to pinch out the buds of the limbs which are not in the proper place for tree forming. The next few years the pruning necessary is to remove the cross branches which would interfere with the even head formation of the tree. Trees should form their head from 5 to 7 feet from the ground.

In removing a limb we follow the practice of cutting the limb off, not close to the body, but up the limb $\frac{1}{2}$ the diameter of the limb. This applies to small as well as larger limbs. The reason of this is that if the limb is removed close to the body it will present an open surface for evaporation often from 20 per cent to 40 per cent of the circumference of the tree, but by cutting it off higher up and leaving it there for two years before cutting close to the body, it will then present an open surface for a much smaller per cent of circumference. All freshly cut surfaces should be painted over to prevent the evaporation of sap from the tree and prevent fungus diseases from entering. Deck paint is good.

A crotch tree is one in which the trunk is equally balanced into two branches. This is a very dangerous form for a tree, owing to the fact that storms often split them and ruin the whole tree. The best remedy for a crotch tree is to cut off about one-third of the branches on one of the limbs. This will allow the other limbs to predominate, and in a short time the tree ceases to be a crotch tree.

How to Top-Work a Large Pecan Tree

This consists of three things: Sawing the top off while the trees are dormant; budding into the sprouts the following summer; and keeping the suckers removed.

In detail, we would say that any time in the winter while the trees are dormant, preferably February, is the time to top them. Trees from 12 inches down are the ones most advantageously worked. On approaching a tree, glance at it and decide where you want it to form its future head by selecting a cluster of branches on the tree. Do not undertake to bud the tree at considerable distance up and down; it is not necessary. After you have selected the cluster for the future head, then saw off the main trunk from 6 to 10 inches above the upper branches, and the other branches from 6 to 20 inches to give it a pyramidal

shape. Arrange to leave on the tree from 15 to 20 per cent of the lower limbs to keep up the circulation of the sap, thereby affording vigor and stamina to the tree while the new head is being formed. In sawing off these limbs carefully saw the under side first and then saw the upper side, avoiding, in each case, the limbs splitting downward. When this is cut, paint it at once. If the trees are in a scrawny condition they must be fertilized at once, but if in a thrifty condition, the fertilizer will not be needed. Avoid making the trees too thrifty, for it will cause the sprouts to grow abnormally.

About the first of May, if the trees have sent out too many branches they should be thinned out so they will be about 4 to 8 inches apart. This is necessary in order to have well-ripened sprouts to receive the buds later on. The month of July is the best month to bud these new sprouts. While the bark is too tender, and the buds are not brown, the trees are not ripe for topping, and, if budded then, will not live or do well.

The budding of the sprouts is exactly the same operation as described for budding the trees in the nursery. When ready to bud, arrange to put from 10 to 20 buds on a tree, that is, from 6 to 10 inches in diameter. Thin out the sprouts to that number. While this is too many, we want to make sure of getting a stand the first summer. When the budder inserts his bud in the new sprout, he should immediately cut the sprout off about 30 inches above bud, leaving five or six fine leaves. The object of cutting this sprout off that height is to protect it in a sudden wind storm.

In four weeks after the buds are inserted, and they are always inserted on the upper side of the limb, the wraps should be carefully removed. As soon as removed, the sprouts should be again cut—this time 3 or 4 inches above the buds.

In another two weeks visit the buds again with knife and strings. Remove all suckers carefully with knife and, with the strings, tie the newly grown buds, which should be from 4 to 10 inches long, to this cut off stub to prevent its being blown off by the wind.

Two or three weeks later visit the trees again, and remove suckers and tie buds. This completes the work for the first summer.

When the buds begin to grow, keep all suckers (seedling sprouts) removed promptly. When sufficient buds begin to grow to form the new head of tree,

and when these inserted buds are about one foot in length, retard the growth of that lower 20 per cent of sap ripening limbs by cutting them part in two and breaking limbs down. They will still stay green, but will not make much growth. If top of tree where buds have been inserted is doing well, these lower limbs should be removed about the middle of July. If buds fail to grow, or enough fail to grow, then leave on that 20 per cent of lower limbs till a fair top has been started. All very rapidly growing buds should have one-half of the tops removed at any time of the year. This makes them stocky and saves them in time of gales.

To Top-Work a Pecan Tree in the Spring by Grafting by Slip-bark Method. Saw off tree 1 to 6 inches in diameter when growth begins in the spring so bark will slip. Take dormant scions of variety desired; sharpen them down on one side only, having the cut surface about 3 inches long. On side of tree with least ridge pry open the bark with wedge a short distance and insert prepared scions, shoving down till cut surface is not exposed. Tie securely with wax cloth and cover top of tree with wax. Then stake it.

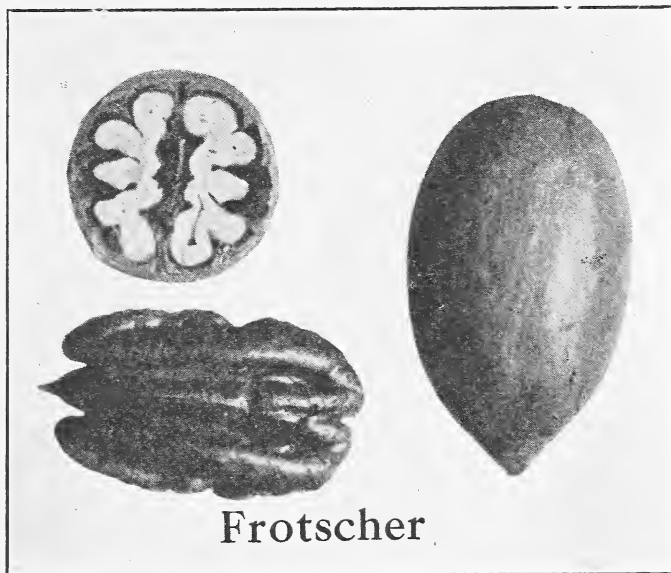
Pecans on Hickory

Top work with hickory to pecans has been done by many and in some places extensively. Theoretically the plan was all correct, but results prove that it is strictly not desirable for heavy yields. The pecans grow too fast for a few years, and when the top is compelled to partake of the nature of the slower growing stock it curtails its growth and especially its yield. At the end of twelve or fifteen years I believe I can plant a pecan seed and bud it to a pecan and grow a finer tree than can be grown by top working a hickory 6 inches in diameter to start with.

Go slow on top working hickory to pecan except for effect in a small way and for interesting work.

Pecan Diseases

Some people are under the impression that the hardy pecan tree of the forest



See description on page 22

is free from insects, but the State Entomologist of Georgia makes the statement that forty insects attack the pecan. We are glad that there are so many insects that like the pecan, for even insects like something good.

Of the forty insects which attack pecans, there are only a few serious ones, and the entomologist assures us that with sprays of arsenate of lead we can control the insects satisfactorily.

Leaf Casebearer. This insect enters the buds early in Spring and devours them, bud, leaf and all, causing the limbs to look like they had been stripped of their foliage. It is controlled by one application of arsenate of lead in July, August or early September.

Nut Casebearer. A small insect that enters the nut and devours it. It is controlled by three applications of arsenate of lead in Spring. First application when nuts are the size of a pea, second from one week to ten days later, third about two weeks later. It is also controlled by its natural enemies.

Scab. A fungus disease which begins by spores on the leaf, stem, and nut. The brown spot continues to enlarge till it sometimes covers the whole surface. It saps the tissue, and causes growth to cease, and often the nuts to shed. The remedy is a few applications of lime-sulphur in a spray.

Tent Caterpillar. Remedy: Diligently remove and burn.

Tree Girdler. Remedy: Diligently gather and burn.

Kernel Spots. Dark spots on kernel like bitter-rot in apple. It is caused by a chinch bug about the size of your small finger nail. Remedy: Leave off in bearing groves, cow peas, soy beans, okra, tomatoes and other garden crops.

Borers. Trunk borers should be sought regularly. Remedy: Use carbon bi-sulphide. Apply with a medicine dropper, and paste immediately with putty or clay.

Nut Weevil. Only serious on some varieties. Gather hulls and destroy by burning. Hogs in orchard help keep them subdued.

If any other trouble presents itself, please send sample and write us. The best spray pumps are the "Bean Sprayer," Lansing, Mich., the "Friend Sprayer," Gassport, New York. They both print a booklet on spraying operations and any who need information will be benefited by writing them.

Make a practice of writing to your State Entomologist and State Horticulturist, and State Extension man for advice about fruit growing, especially pecans, as to varieties, best source to buy trees, what to do with different troubles whether cultural or insects.

What Fruits to Grow in a Pecan Grove

In most sections where pecan trees are grown, peaches can be grown successfully between the trees. The main point to consider is to be sure not to allow the soil to become exhausted by the peach trees, thus depriving the pecan trees of sufficient nutrition.

In a few sections figs and Japan Persimmons make good by-crops for pecan groves.

Age of Bearing

We have repeatedly had pecan trees which bore the first year, grafted in the nursery. We had one tree which bore sixty-two large nuts the third year, seventy-five the fourth year, and eight hundred the fifth year. We had a Mobile which bore 20½ pounds the fifth year. We gathered 14½ pounds of Money Maker the sixth year, and 5½ pounds of Curtis the sixth year from a tree growing in Bermuda grass and planted to oats each winter.

All this is to show that pecans often begin to bear early, but all of the pecan growers, seeking practical results, do not



Gathering the nuts and making one shipment of one ton is the true elixir of life

want trees to bear till the tenth year. If cultivated for growth till this age they will then make much larger yields than if allowed to be stunted in early bearing.

Acutal Pecan Yields

The Moore nut bore 62 pounds the sixth year after planting; the Mobile 20½ pounds the fifth year. The Brooks bore in three years—the seventh, eighth and ninth years—a total of 200 pounds, the tenth year 106 pounds. The Wight Frotscher tree bore 344 pounds in 1913, and a total of 2,140 pounds in the whole 22 years planted.

The Wise grove at Fitzgerald, Ga., ten acres, bore a few nuts the fourth year. The fifth year bore 63 pounds, the ninth year 900 pounds, and the tenth year 1,100 pounds.

R. J. Parks' grove of twenty-five acres, twenty-seven trees to the acre, bore the ninth year, 2,800 pounds.

The Calloway tree at Hardaway, Ga., in 1911, bore 400 pounds, and that was its twenty-fifth year.

The original Claremont pecan tree at Pecania, La., is about forty years old, and has produced as high as 350 pounds of nuts in a single season, which have sold for 40 cents a pound and over. The tree is valued by its owner at \$1,000.

Theo. Bechtel has in his back yard at Ocean Springs, Miss., a tree of the Van Deman variety, a kind which is not regarded as a prolific bearer, although its advocates claim that additional age will show increasing crops, a theory which seems to find confirmation in this case. The tree was planted in 1900. The crop of 1910 was 100 pounds. A year later, 1911, it yielded 60 pounds; in 1912, 70 pounds; in 1913, 185 pounds; in 1914, 100 pounds.

The John I. Parker grove here at Thomasville, consisting of ten acres (Frotschers), bore:

| | |
|---------------------------------------|-------------|
| 4th year | a few nuts |
| 5th year | 180 pounds |
| 6th year | 210 pounds |
| 7th year | 1137 pounds |
| 8th year | 637 pounds |
| 9th year | 2698 pounds |
| and netted that year \$90.00 per acre | |
| 10th and 11th years..poor crops | |

All these are records of the best yielding trees and groves, but the owners of each will tell you that their experience enables them to do even better if it were repeated.

Gathering, Drying, Polishing and Grading

Gathering. From the middle of September to the 15th of November is the time for gathering pecan nuts. The greatest per cent of the crop is gathered between the dates of October 15th and November 15th. Some make three or four gatherings of the crop to prevent discoloration and the loss from intruders, and to prevent those in the flooded districts from being washed away. The most practical time to gather pecans is when 80 per cent of the shells have cracked. Just before gathering remove all obstructions from under the tree, either by mowing it off with a mowing machine, or cutting it off with a hoe. Then, with good fishing poles, thresh down the nuts of high trees. This is accomplished by making a high frame on a wagon which will allow the men to reach the branches of the trees from the frame.

In picking up nuts from the ground, never put your hands on one which still has its shell on it. The reason for this is that they are more or less faulty, and will not pay for the trouble of handling. Gather nuts in suitable baskets like peach baskets, and pour them into sacks for carrying to the pecan storage room. In gathering be sure never to mix the varieties. Two large sheets, one on each side of the tree, make quite a convenience in gathering nuts. When hulled out, burn the hulls or scatter in hog lot. In this way the shuck worm is destroyed.

Quite often the first nuts to ripen are faulty. It is a good plan to gather these before the main crop is ready. These can be shelled out instead of being mixed with the whole crop.

Drying. The nuts are dried by placing in sacks of about one bushel each; the sacks being handled several times in being taken out to sun and returned, thus polishing them. Still another way is to place them on screen sieves in the sun. Still another way is to place them on screen shelves in the storage room. They should become thoroughly dry before they are offered for sale, this taking about three weeks' time.

Artificial driers are in satisfactory operation. The pecans are put on screens, then placed in a kiln and heat applied for ten hours at about 110 degrees. Then the doors are opened and the kiln is allowed to gradually cool off for ten or twelve hours. Fresh nuts used this way are thoroughly and uniformly dried, and

by chemical analysis, make no change in their composition. They are ready to be stored in bulk or for consumption.

A damp cellar is never a good place to store pecans, because they will become rancid. Any good ventilated building where the moisture can be controlled, makes the best storage room. To keep them over six or eight months, they will probably have to be put into cold storage, where the temperature should be from forty to fifty degrees; and so far as we know will keep indefinitely.

Polishing. Some varieties of nuts, like Frotscher, Pabst, Van Deman, and others reasonably clean, appear best on the market without any extra polishing. Money Maker, Brooks, Schley, Delmas, and other nuts which are too dark when first gathered, are wonderfully improved in appearance by polishing before being offered for sale.

This operation is performed by rubbing them in sacks, and also by machinery made for that purpose, which might be termed a mixing machine or polishing machine. This polishing operation does not improve or detract from the quality of the nut. Quantities of mixed nuts, varying greatly in color, are often stained to give them a uniform appearance for commercial purposes. This is an advantage from the appearance standpoint, but is detrimental from the quality standpoint. The

public needs to be educated to the fact that the finest quality of nuts is obtained from those not artificially stained.

Grading. Most likely the proper grading for pecans will require them to be put into three separate grades: No. 1, No. 2 and culls. Always crack the culls and sell them as meats only.

Grading machines with elongated slots in the cylinders should be used.

Stuart, Frotscher, Delmas, Alley and Money-Maker 13-16 and up, short diameter, to be classed as No. 1, and 11-16 and 12-16 to constitute No. 2. Varieties Schley, Van Deman and Pabst 12-16 and up to constitute No. 1, and the next two lower sixteenths to be classed as No. 2. Curtis 11-16 and up as No. 1, and 9-16 and 10-16 No. 2. On account of irregular filling habits of Nelson, Columbian, Mobile, Teche and Russell, they were not graded.

Marketing

The growing of pecans is one business, and marketing them is altogether another business. In order to sell our pecans we have to study the markets, learn what the trade wants, in what grade they want them, number of grades, and in what packages they are wanted.

We can often sell our pecan to a private fancy trade by advertising, sending out prices with samples, and dispose of



Pecans and Alfalfa

our crops very satisfactorily to this direct trade; but when quantities of the standard varieties are gathered, and are ready to be shipped in car loads, we have to rely upon the regular channels of trade that handle such products in car load lots.

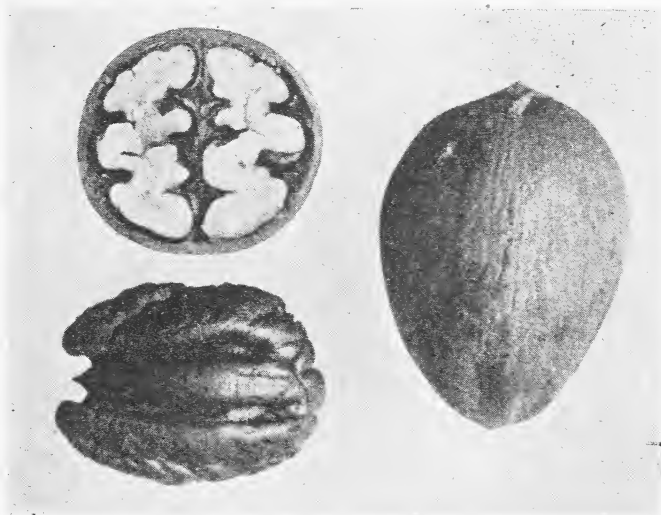
We are quite fortunate in having many produce exchanges to discover the best ways of offering such crops. We also have the benefit of the apple and peach exchanges, which have to handle a perishable crop, in a limited time, to a limited territory. We are also fortunate in having the benefit of the California Fruit Exchange of many years in successful operation, in handling a valuable crop, all disadvantages being considered.

The different pecan organizations recognize this subject as one of the most important problems for consideration, and they have committees composed of the most efficient members to make a study of this marketing, and we do not anticipate any serious trouble or losses, in disposing of the nuts grown in the South. We realize that the fancy prices of from 50c to \$1.00 a pound are excessive, when the nuts in quantities have to be handled through the regular channels of trade, like other products.

The pecan growers already realize the necessity of direct representation by the practical growers in the great question of marketing the nuts. The New York Milk Trust teaches us not to be at the mercy of the jobbers. The experiences of the grain growers with the Elevator Trust serves a valuable sign board to the pecan grower.

It is well to work up a private trade, eliminating the middle men as much as possible, but at the same time co-operating with those men who are laboring to establish pecan exchanges for the disposition of all the nuts, so that proper returns will be realized.

If the Georgia peach growers, with 12,000,000 of trees, can find a satisfactory market for 7,000 car loads of peaches in the short space of eight weeks, selling a perishable product which cannot be shipped too great a distance, it looks



Success (See description on page 23)

possible that the pecan growers can sell the nuts from the half million trees, when they have twelve months' time, and for a product that is not perishable and can be shipped to any point on the globe. Acquaint the world with the merits of the Paper Shell Pecan, and the problem of marketing will be solved.

When you have any pecans for sale in any quantity, whether Seedlings or the improved varieties, write to the Thomasville Pecan Growers Exchange. We are in position to aid you in getting a satisfactory price for your crop.

Co-operative marketing has been demonstrated in the handling of the cotton crop in addition to the successful co-operative marketing of fruit crops. Some pecan growers advocate a mixing of blending into a brand of the leading varieties, but we think that the leading varieties of today, which consist of only about six varieties, that it is best to sell them by variety instead of mixing them into brands. When there is enough of one variety to make a class in the marketing, the most profitable way to sell it is by the variety. When any of the present leading varieties for different reasons is produced in a small quantity so that there will not be enough of them for a class, then that variety will be withdrawn and those nuts, like all other small lot nuts, can be sold as mixed nuts.

Best Pecan Crackers

When you have formed the habit of eating pecans, which, by the way, is a very pleasant one, the next best addition is a nut cracker.

The Perfection Cracker, made at Waco, Texas, proves to be a very satisfactory implement.

Should you be interested in cracking nuts in a wholesale way, where you wish to furnish them by the ton, write Mr. Robt. Woodson, of St. Louis, Mo., and get his prices on a power machine, which

will crack from 500 to 600 pounds per day.

Dry pecans are more easily cracked if soaked in water over night.

Pecan Analysis and Food Value

We enclose here from the Department of Agriculture at Washington, D. C., analysis of pecans and all other nuts, and a comparison of these nuts to other food products. At a glance, one can see the value of pecans as compared to the other nuts.



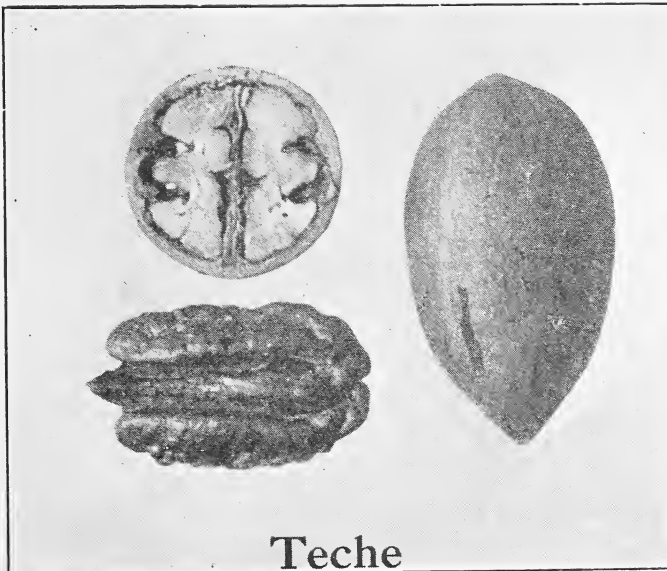
Food Value of Nuts Compared

Pecans Lead the List

(From the Farmers Bulletin No. 122, Department of Agriculture)

Composition of Nuts and Some Other Food Materials

| | Water per Cent | Protein per Cent | Fat per Cent | Carbo- Hyd- rates per Cent | Ash per Cent | Fuel Value per Pound calories |
|---------------------------|----------------------|------------------------|--------------------|--|--------------------|---|
| Acorns..... | 4.1 | 8.1 | 37.4 | 48.0 | 2.4 | 2,718 |
| Almonds..... | 4.8 | 21.0 | 54.9 | 17.3 | 2.0 | 3,030 |
| Beechnuts..... | 4.0 | 21.9 | 57.4 | 13.2 | 3.5 | 3,263 |
| Beefsteak..... | 61.9 | 18.9 | 18.5 | | 1.0 | 1,130 |
| Butternuts..... | 4.5 | 27.9 | 61.2 | 3.4 | 3.0 | 3,371 |
| Brazil Nuts..... | 5.3 | 17.0 | 66.8 | 7.0 | 3.9 | 3,329 |
| Chestnuts (fresh)..... | 45.0 | 6.3 | 6.4 | 42.1 | 1.3 | 1,125 |
| Chestnuts (dried)..... | 5.9 | 10.7 | 7.0 | 74.2 | 2.2 | 1,875 |
| Cocoanuts..... | 14.1 | 5.7 | 50.6 | 27.9 | 1.7 | 2,986 |
| Cocoanuts (shredded)..... | 3.5 | 6.3 | 57.3 | 31.6 | 1.3 | 3,105 |
| English Walnuts..... | 2.8 | 16.7 | 64.4 | 14.8 | 1.3 | 3,305 |
| Filberts..... | 3.7 | 15.6 | 65.3 | 12.0 | 2.4 | 3,432 |
| Hickory Nuts..... | 3.7 | 15.4 | 67.4 | 11.4 | 2.1 | 3,495 |
| Litchi Nuts..... | 17.9 | 2.9 | .2 | 77.5 | 1.5 | 1,453 |
| Pecans..... | 3.0 | 11.0 | 71.2 | 13.3 | 1.5 | 3,633 |
| Peanuts, raw..... | 9.2 | 25.8 | 38.6 | 24.4 | 2.0 | 2,560 |
| Peanuts, roasted..... | 1.6 | 30.5 | 49.2 | 16.2 | 2.5 | 3,177 |
| Pistachio, kernels..... | 4.2 | 22.6 | 54.5 | 15.6 | 3.1 | 3,010 |
| Pinenuts or pinon..... | 3.4 | 14.6 | 61.9 | 17.3 | 2.8 | 3,364 |
| Potatoes..... | 78.3 | 2.2 | .1 | 18.4 | 1.0 | 385 |
| Walnuts..... | 2.5 | 27.6 | 56.3 | 11.7 | 1.9 | 3,105 |
| Wheat Flour..... | 12.8 | 10.8 | 1.1 | 74.8 | 0.5 | 1,640 |



As we have mentioned before, if pecans were put into the lunches of the school children, they would not only very easily consume the nuts of the United States, but from this table you can see that they would be supplied with the very finest of products. Nut lunches on the trains are the most satisfactory lunches that can be prepared.

The Battle Creek Sanitarium at Battle Creek, Mich., is the greatest institution of its kind in the world, and uses nuts to the exclusion of meats. I am

in receipt of a recent letter from Dr. J. H. Kellogg, superintendent of that famous sanitarium, dealing with the food merits of the pecan. Dr. Kellogg says:

"You ask my opinion with reference to the pecan. I regard it as one of the very finest of nature's choice products. A pound of pecans contains more nourishment than any other known food. A pound of pecans contains as much protein as half a pound of meat, as much fat as three-fourths of a pound of butter and as much starch and carbohydrates as one-fourth of a pound of bread; so that a pound of pecans is the equivalent of a pound and a half of other highly concentrated and nourishing food. In comparing total values, a pound of pecans is worth, in nutritive value, two pounds of pork chops, three pounds of salmon, two and a half pounds of turkey or five pounds of veal.

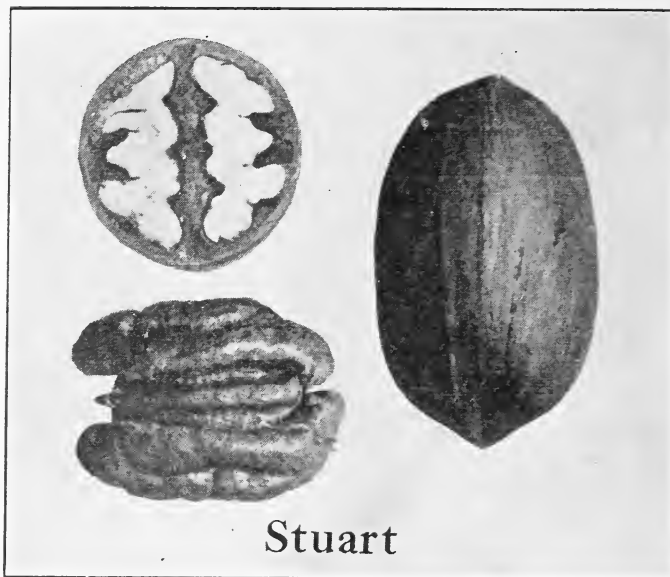
"An acre of land planted in pecans will produce from four to ten times as much nourishment as one used for pasture. In the next century nuts will largely, if not entirely, take the place of meats on the bill of fare and the pecan will assume its rightful place at the head of the list of nourishing and digestible foodstuffs."

It is reported by good authorities that the United States produced more pecans in the year 1912 than it produced in the whole twentieth century. In 1884 there was only one car load of pecans shelled, in 1912 there were 298 car loads of pecans shelled. This shows considerable increase, but is small as compared to what it will be in the next ten years. Greater uses for nuts are found every day, and the quantities used by confectioners and grocery stores are rapidly increasing their immense consumption.

The industry of the peanut increased from a few pounds to over a thousand car loads a year and still we imported last year of peanuts alone, 29,000,000 pounds.

Although at present the use of the pecan is almost unlimited, it is small when compared to what it will be when the public becomes informed of its quality.

The eating of excessive amount of pecans, or after heavy meals or late at night, is not recommended, but eaten with other foods, as all heavily concentrated



See description on pages 21-22

foods should be eaten, will prove beneficial to almost any one. The pecan especially appeals to those using the raw food diet, as well as to those who want a sanitary article and 100 per cent good meat in concentrated form.

A conservative estimate fixes ten acres of grass land necessary to supply an average family with beef for one year. The same conservative estimate fixes one-tenth that amount of land necessary to supply an average family with the choicest and most wholesome food of pecans.

The Future Marketing of Pecans

The old adage, "Necessity knows no law," we think will prove applicable to the subject of marketing pecans. A few years ago no one dreamed that it would take a few million dollars to supply the peanut trade of today, and the demand is still growing; while the quantities of corn flakes and such cereals that are now being used would stagger the average person.

The tendency towards convenience in all food products compels us to believe that a large percent of the pecan crop ten years hence will be offered already shelled. This presents the unit of food to the consumer without the necessity of a cracker, and eliminates the inconvenience of the shells and annoyance of scattered fragments.

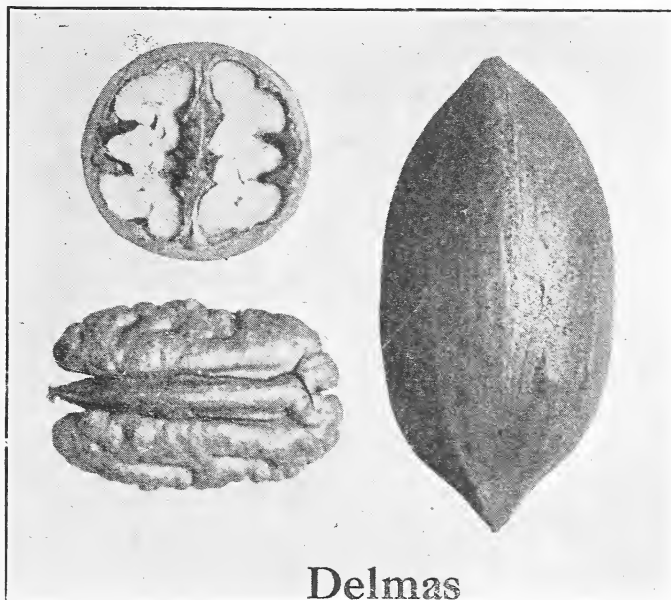
When the Paper Shell Pecan is sufficiently well known, and is offered to the public in shelled cartons or packages, the

traveling public on parlor cars and day coaches can alone use more pecans than are at present grown. Any product having the immense value of the pecan will have plenty of competition in the commercial world that handles it. No one pecan exchange will monopolize the business, but each district will have one, and possibly several, exchanges in each district. Co-operation will be one of the essentials for successful handling of pecans, and the other will be the proper grading and classifying.

Varieties

We propagate the standard varieties of pecans, and constantly study the adaptability of each variety to the different sections where pecans are planted. Some varieties, after being tested a few years, fail to have the necessary requirements to warrant the continuation of their planting. Other varieties are discovered which have some superior merits, and they are all thoroughly tested, and if they prove to have the essential good points they are then propagated.

A variety must have three essential qualities: The first is tonnage, the sec-



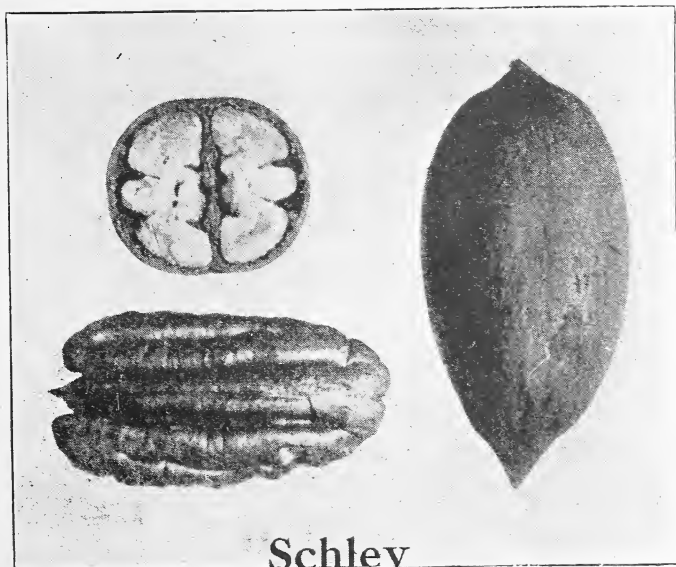
Delmas

See description on pages 21-23

ond is size, and the third is quality. We put tonnage or yield first, for it makes no difference how superior a nut is in all other points if it is not a good yielder it does not become popular. Under the heading of size and appearance it is first essential that the nut present well before it is cracked, and it must also present well after it is cracked. The quality of the nut is the third essential point, and it is the one that is the proof of the good qualities of a variety, and one that is essential in order that the demand may be made constant.

Stuart

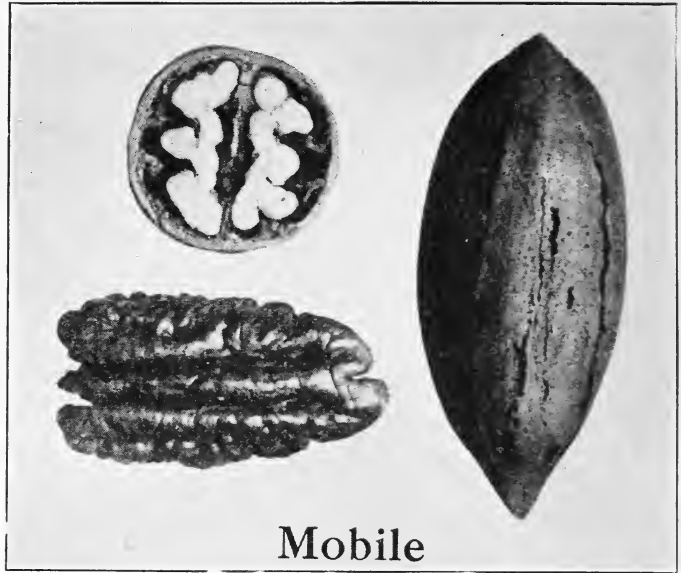
Size large, ovate cylindrical; color grayish-brown, splashed and dotted with purplish-black; base rounded, tipped; apex blunt, abrupt, somewhat four-angled; shell medium in thickness; partitions thin; cracking quality not very good; kernel plump, full, bright straw colored; sutures moderately broad and deep, secondary sutures not well defined; texture solid, fine grained; flavor rich, sweet; quality very good. While very plump it is not so easily removed from shell whole as some other varieties.



Schley

See description on pages 21-22

The whole country over still votes the Stuart a popular pecan. We have given a full description of it, and in addition, would say, the objection to it is that it is a little hard to shell, but if allowed to be stored for two months it shells very much more readily, and then the plump kernels are exceedingly attractive. The cracking machines will handle them very satisfactorily when we get a surplus of this fine nut. In some sections the shuck worm materially affects the appearance of the Stuart for market.



Mobile

See description on page 23

Frotscher

Size large, cylindrical ovate; color bright yellowish brown, with a few black splashes about the apex; base broad, rounded; apex blunt-pointed, four-angled; shell slightly ridged, smooth, thin; partitions thin; cracking quality excellent; kernel brownish-yellow, dark veined, frequently slack at one end; sutures of medium depth, rather narrow; secondary sutures well marked; texture dry, flavor good, quality fair to medium. (See illustration on page 13.)

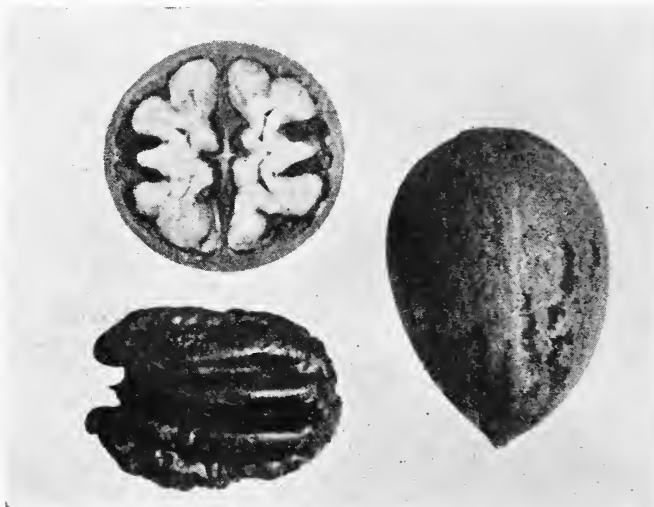
The Frotscher is a very popular nut in this whole section. Its finest point is the appearance it makes upon the market. They are easily cracked without any arti-

ficial assistance, and where the trees are given intensive culture they give best satisfaction. It is not a variety that will stand neglect like some other varieties, and this one point has caused some to dislike it.

Schley

Size above medium, oblong, oval flattened; color light reddish-brown, marked with small specks about the base and small splashes of purplish brown about the apex; base rounded, abruptly short nipped; apex abrupt, flattened on two sides.

The Schley pecan, if a prolific bearer, would occupy half of all the orchards planted, on account of its being of very thin shell, fine texture and good quality. In sections where it has been tested and proved to be a reasonably fair bearer we think it will result in being the most profitable variety to plant. Up to the present, the most universal report of the Schley has been that it was too shy a bearer, but now the trees are getting older and many sections are reporting that the Schley is bearing sufficiently good crops. The kernel is not only plump and universally well filled, but it has a very



Money Maker

See description on page 23

uniform bright color of the meat. Another objection to the Schley is that it is not so large as some of the other varieties and crops run irregular in size.

Delmas

Size large to very large, averaging 40 to 50 nuts to the pound; form oblong, ovate; shell moderately thin; kernel plump; quality good to very good; flavor excellent; tree one of the most vigorous of all; very productive. The nuts are not as bright as some of the other varieties, but are exceedingly uniform in size. The tree is upright in growth and is one of the thriftiest varieties propagated.

The objections are that in some very moist sections some years it scabs considerably on the lower limbs. The other objection is that the nuts are not as bright in appearance, and will not show up so well in the market. Even in sections where it scabs badly the drier years, it yields a most satisfactory crop through the middle of the cotton states, and especially in Texas it is one of the finest varieties that can be planted for commercial orchards.

Pabst

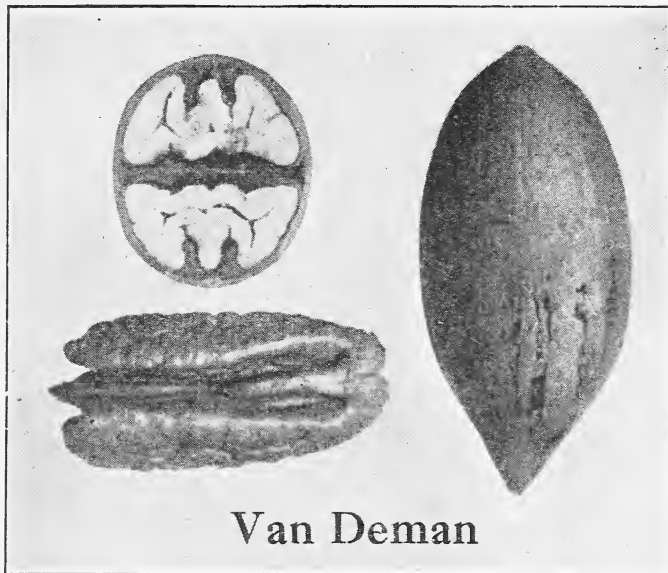
This variety continues to stand the test over a large territory, and is one of the standard varieties for commercial orchards, being thrifty and especially hardy. It does not shed exceedingly dry years, and it does not overbear and have off years like some varieties.

The objections to the Pabst are that it is not quite large enough to be classed with the very large nuts. The quality of it, however, makes the person who eats it want some more Pabst.

Money Maker

The good points of the Money Maker are that it is more free from all diseases than any variety which we grow. The next finest point it has is its prolificness. It is also very easy to crack out in unbroken halves, and when cracked it is uniformly a bright yellow, plump and attractive nut.

The two objections to the Money Maker are that the shell is a little too



See description on page 24

thick to be classed as a fancy nut, and it is a little under size, and will have to be classed as a medium nut. It grows in favor annually.

Mobile

Size medium to large; shell moderately thin; quality fair; kernel uniformly bright and attractive. It is very productive, and even in the driest years the Mobile is breaking its limbs with fruit.

The objection to the Mobile is that quite often the nuts fail to fill sufficiently well. This being the case, they should not be offered until after having been well fanned to blow out the faulty ones, or run through a centrifugal machine to select the plump nuts from the faulty ones.

On account of the very prolific bearing habits of the Mobile, it probably would be a good plan to plant a portion of a grove of this variety, with the expectation of having the nuts shelled and selling the meats. In this way the exceeding prolificness of the tree will make it profitable.

In the districts where they have a close, compact, clay soil, the nuts fill better than in districts of loose, sandy soils.

Success

Size large to very large; shell moderately thin but very tough; kernel usually plump and rich; flavor very good.

It is not sufficiently well tested in all of the pecan districts. Some of the young trees which have been bearing in different

districts, have not yielded nuts well filled, but as they grow older we feel confident that this objection will be eliminated.

Van Deman

Van Deman: The most ideal in shape of all nuts. It easily scabs and we do not propagate it any more.

Best Varieties for Different Sections

For North Carolina: Delmas, Stuart, Schley, Money Maker and Pabst.

For South Carolina: Schley, Stuart, Pabst, Money Maker, Frotscher and Success.

For Central Portions of Georgia, Alabama, Mississippi and Texas: Delmas, Schley, Stuart, Success, Frotscher and Pabst.

For Southern Georgia: Schley, Stuart, Success, Alley, Pabst and Frotscher.

For North Florida: Moore, Schley, Success, Money Maker, Stuart and Curtis.

For Southern Alabama, Mississippi and Louisiana: Schley, Stuart, Success, Pabst, Frotscher and Money Maker.

For Eastern Texas: Stuart, Schley, Pabst, Carman and James.

For Texas, West of Austin: Halbert, Texas Prolific, Oliver, San Saba, Kincaid and Delmas.

For Arizona: Alley, Delmas, Georgia, Kincaid and Stuart.

Will There Be Over Production

So many good, thinking business men have asked the question, "When will we have over production in standard pecans?", that we have decided to give this subject some consideration.

Pecan culture, while it is the most promising new industry of the South at present, when it becomes adjusted in the regular avenue of trade, will be as standard a product as any. With the map of the world before us, when we consider what a small per cent of the South is well adapted to the growing of standard pecans, and when we consider that the

present crop of pecans of the whole United States would supply the school children a nut lunch for only one week, if it were distributed to all the school children in the United States, it begins to look as though it will be several years before we will have a supply, much less an over production. Then let us take into consideration that the taxed, burdened Orient, and Europe with staggering war tax, will not soon grow pecans for export. For these reasons we are inclined to think that over production is not soon to be.

As an actual fact, in the next forty years, the population of the United States alone will be 200,000,000 or more, and the demand for such standard goods will grow faster than the nuts will be produced.

Over production, if we have it at all, will be the result of congestion, and we will never have it if we inaugurate a system of co-operative distribution.

Under this head of over production, it is gratifying to note that while the United States grows at present a large quantity of nuts, still we only grow at home one-fourth of what we use, and import three-fourths. We import three pounds of nuts to every one pound grown at home. We have imported in the last eleven months just 61,000,000 pounds of nuts—walnuts, filberts and almonds.

Van Buren, Ark., Sept. 9, 1915.

Dear Sir: I note with pleasure that the splendid lot of pecan trees shipped to me last winter have all grown, and are satisfactory to the purchasers. The shipment sent on my order by you to far away Utah, only suffered a loss of one tree, after being in transit almost a week. No better trees than yours. Let me cite one instance: Husband and wife quarreled as to where a tree should be set and just threw it into the alley, where a kinsman picked it up and set it, after taking the winter's cold for two days. It is growing finely. They will have to keep your trees out of the ground if they don't want them to grow.

W. C. Lea.

Possibilities of a Pecan Grove

This whole booklet has been written just as experience developed it in the field. Not what might be done, but what has actually been done. As to the possibilities of a pecan grove, we would prefer to present a few additional facts and

let the reader draw his own conclusions.

We undertook to develop a grove so the bodies of the trees would measure 12 inches in diameter at end of eight years after setting, and to accomplish this without one shovelful of stable manure. At the end of the seventh year the best tree in the grove (a Money Maker) measured 11 inches in diameter, and had yielded over 30 pounds of nuts; at the end of the eighth year the largest tree measured 39 inches in circumference, and 41 inches the ninth year. We do know that we can develop a grove 12 inches in diameter in eight years, can gather a few nuts the fourth and fifth years, but we do not know what the possibilities of a grove would be when given intelligent and intensive attention from before it is planted to maturity. A pecan grove will respond beautifully to this kind of attention, and only to this kind. Hybridized and pedigreed varieties of the future nuts might hold wonderful improvements in store for us.

I count it a privilege to be one to help launch such a promising new industry, especially when we consider the fact that in the future heavier yields per acre will have to be made and pecans fill this demand most desirably.

We leave you to accept the opportunity offered by improved pecans, the truest elixir of life found by this scribe.

Pecan Trees on Streets

Some people and some cities advocate the planting of pecan trees on the streets, arguing that they will get both utility and beauty from the tree. This sounds practical, but in reality we consider pecan trees on the streets objectionable for the reason that when the trees begin to bear the passing public claims the crops.

A few scattering pecan trees in a city is a nuisance. When civic pride plants them all over the city, then it becomes not only a joy and beauty but an asset.

Absolutely No Agents

Why pay an agent as much for his services as the trees cost? Be your own agent and send direct to the nursery, as he does, and save his profits.

Order direct from headquarters and pocket the fruit tree agent's profit. Read the letters from our customers. They are men of experience with our trees and

dealings and know where to get full value for money sent. Have you bought trees of agents? Did you pay high prices and then get deceived? Could you find agent afterwards to get him to make trees good? Now we earnestly ask you to give us a trial. We sell at about one-half the agent's price. **We support no middle man.** We guarantee our trees to be true to name, and you can find us, for we have a regular place of business, and have a reputation to maintain. Can you find any locality that has not been misrepresented by agents? Where our trees are the best known is where they are most appreciated.

Announcement

"The Pecan Business" is written for those who are interested in pecan growing and for those who desire to become interested in a safe and profitable business.

The industry is interesting, healthful, profitable and unlimited. It has drawbacks, but they are necessary to ward off the tenderfoot.

We invite you to come to see our groves and nurseries, and kindly invite your attention to our way of doing business without agents.

Write Us

When you receive your trees we want you to write us. When the trees grow we want you to write us. When the trees bear we want you to write us. If any disease or insect appears, we want you to write us so we can aid you. We take all the leading agricultural and horticultural papers and keep abreast with progressive horticulture. We study horticulture, we delight in horticultural works and love to correspond with our customers on horticulture. We want our customers to write us of every new fruit and pecan or other nut trees they know of.

Natural Advantages

The natural advantages of our soil being a happy combination of sand and clay, together with our climate and location, give us facilities for supplying trees of the finest quality and for the lowest prices. Hence the secret by which we give our customers entire satisfaction.

REFERENCES

First National Bank Citizens Banking and Trust Company Bank of Thomasville
 Peoples Savings Bank, all of Thomasville, Ga.
 And Our Customers Everywhere.

**The latch-string hangs on the outside of the gate to visitors.
 Take a day off and come to see our nurseries and groves.**

TESTIMONIALS

Stockton, Ala.
 Mr. B. W. Stone, Thomasville, Ga.
 Dear Sir: "The Pecan Business" dropped into my hands last night and I've read every line of it. I most heartily congratulate you on your production. As far as it goes, it is the most practical and reliable guide I know of; and I've hunted for and studied all the pecan literature I could get my hands on for 18 years. Every page shows a close, careful, practical and impartial observer who has labored for years to acquire facts and truths bearing on pecan horticulture to date.
 R. M. Hodgson, M. D.

Denison, Texas, Sept. 4.
 B. W. Stone, Thomasville, Ga.
 Dear Sir: The copy of "Pecan Business" came to hand today, and it was so interesting that I read most of it before I laid it down, although I had important letters on my desk needing attention. If it were not for the business advertisement of your firm in the book, I would be willing to buy a thousand copies to distribute among our customers, so that they will be benefited by the valuable information contained therein. Yours truly,
 Will B. Munson.

Hackleburg, Ala., Oct. 5.
 Dear Sir: The trees I bought of you gave entire satisfaction. I bought of you last spring about 300 trees. Please mail me your "Pecan Business" book; the last one was all I could have wished for; I do not see how you could improve on it much. It is plain facts boiled down that just suits the busy man. A glance and you have the information you want.
 Respectfully,

W. W. Wates.

July 31.
 My Dear Sir: I thank you for the inquiry regarding my pecan trees; and beg to report that every one of them appears to be in a trifty, growing condition. There was one, that for quite a while did not put out new shoots, and while it appeared to still be living, I was somewhat bothered.

I called my negro and said to him, "Now here is the only one of these trees that I personally superintended the planting of and gave you specific instructions regarding the remainder. What did you do to those other trees to make them sprout out, and what is the matter with this one that it don't come on?"

He showed his evident satisfaction, but candidly said, "Boss, don't you remember this tree had the worst roots of any of them? It is going to come on alright." We waited a while longer and the tree has now made a good showing, nearly as good as the others. I am well pleased with the whole lot and now feel that another season will show us a most satisfactory growth. Several of my friends have been talking to me and hope to be able to send you some orders for spring planting.

Again thanking you, I am, with best wishes,
 Yours very truly,

Sanford Duncan.

Chipley, Ga., Sept. 8.

Dear Mr. Stone: I am more than pleased with the trees I bought from you last spring. They were really better than you represented them. Out of about one thousand I bought from you practically none died, not more than twenty. Some have grown at least two feet this year. Wishing you great success.

J. W. Bryant.

Orangeburg, S. C., Sept. 1.

Dear Sir: The pecan trees I purchased from you are sure fine. The Mobile and Stuart bore fine last year and I sold the nuts at a fancy price. I don't think I ever saw as many pecans on young trees. They were loaded down, four and five to the bunch. The young pecan trees I bought of you look fine. The only thing I regret is I didn't purchase enough of them.
 J. P. Avinger.

Mr. B. W. Stone. Dallas, Texas.

Dear Mr. Stone: The pecan trees bought of you and transplanted in January, 1907, have more than met expectations. They were fine, well-grown trees with splendid root systems when received, and with the care and cultivation

given, have made good. Most of them began to bear in three years from transplanting and are all bearing now. Some of them have proved to be of an especially good strain of named varieties. A considerable number of native trees in the neighborhood have been budded from them. These are also bearing and the owners are proud of them. Age considered, they are the largest and most fruitful pecan trees I know of and the amount paid for them multiplied by one hundred would not take them from my grounds.

Chas. L. Edwards.

Later: Dallas, Texas, Sept. 11.

Dear Bro. Stone: I can make good use of at least a dozen of your booklets on "The Pecan Business." People who visit me and now and then a correspondent, inquire for practical literature on pecans. The first copy you sent me was given away long ago. The one that came last week was read with profit and will doubtless soon go out on a missionary tour. It's a good book that bears re-reading with interest. Yours meets that test of merit.

Very truly,

Chas. L. Edwards.

Jennings, La., June 6.

Dear Sir: I wish to report on the pecan trees you shipped me this spring. Every one of the sixty is growing fine. I set out the seventy-five which you shipped to J. M. Pratt and they are all growing and doing fine. I will say that I never saw pecan trees with such fine lateral roots as the ones you shipped to me and Mr. Pratt. I have about thirty-five pecan seedlings which are three years old and I would like to get thirty-five Stuart buds. If you can furnish them please let me know at what price you can send them by prepaid parcel post.

Yours truly,

R. E. Berger.

Boston, Mass.

B. W. Stone, Thomasville, Ga.

Dear Mr. Stone: I have 2,500 trees well planted in dynamited holes, which is all we can give the best care to at present. In reference to those we bought of you would say that excepting a very small per cent, all of them lived and are today making an unusually vigorous growth. As to their being true to name, that is why I traded on your long experience and reputation for honesty, which of all things is worth paying for in buying trees, and I feel well insured against disappointment.

Very truly,

Edw. C. Hood.

Winona, Miss., August 30.

Dear Mr. Stone: I want to congratulate you on the booklet, "The Pecan Business." It is just what a pecan grower needs. I have been buying fruit trees of all kinds from you ever since you first began the business. I cannot recall a single tree of any kind that failed to live. I have some trees bearing the third year.

J. T. Buckley.

Rincon, Ga., Sept. 7.

Dear Sir: The 50 pecan trees I ordered from you last spring came to hand in perfect condition. They could not have been in better condition if I had pulled each tree by hand the morning they arrived. They were so far ahead of the trees the agents charge \$1.50 for that they will not talk to me about them. All 50 have made a good start to grow and at this date are looking fine. I followed your instructions in planting and mulching.

J. B. Kessler.

Berkeley, Calif., Sept. 7.

My Dear Mr. Stone:

The trees which were purchased from you last winter are practically all growing in fine shape at the University Farm at Davis. Just now we are anxious to obtain scions for topworking some old trees, and would like to have you quote us a figure at which you can supply us with 20 grafting scions of each of the following varieties: Van Deman, Schley, Pabst, Money Maker, and Success. Thanking you in advance, and with very best wishes, I am as ever,

Very sincerely yours, R. H. Taylor,

Assistant Professor of Pomology,

University of California

Sylvania, Ga., Sept. 30.

My Dear Sir: I very much appreciate your effort to have such good trees to place on the market as you have been furnishing me for a number of years. I have always found you to be fair and square. I have studied your booklet carefully and profitably and would advise every one wanting trees to get your booklet and read it if they wish to be successful in the industry.

W. J. Waters.

Glenmora, La.

Dear Sir: The pecan trees I bought from you have made fine growth and many of them are bearing fine crops of nuts. Every tree that is bearing is producing nuts true to name, size and flavor as described in your booklet. My grove of twenty acres is situated within the corporate limits of town and is a source of admiration not only for myself and family, but for my friends and neighbors who see it daily.

J. T. Phillips, M. D.

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The Thinker

(By Berton Braley)

Back of the beating hammer
By which the steel is wrought,
Back of the workshop's clamor
The seeker may find the Thought,
The Thought that is ever master
Of iron, steam and steel,
That rises above disaster
And tramples it under heel!

The drudge may fret and tinker,
Or labor with dusty blows,
But back of him stands the Thinker,
The clear-eyed man who knows;
For into each plow or sabre,
Each piece and part and whole
Must go to the brains of labor
Which gives the work a soul!

Back of the motor's humming,
Back of the belts that sing,
Back of the hammer's drumming
Back of the cranes that swing.
There is the eye that scans them
Watching through stress and strain.
There is the mind which plans them—
Back of the brawn, the brain!

Might of the roaring boiler
Force of the engine's thrust,
Strength of the sweating toiler
Greatly in these we trust.
But back of them stands the schemer,
The thinker who drives things through
Back of the job—the dreamer,
Who's making the dream come true!



Check for \$911.33 received for one load of nuts. What are the possibilities of a pecan grove?